

### **DETAILED ACTION**

1. Claims 1-4 are presented for examination.

### ***Specification***

2. The abstract of the disclosure does not commence on a separate sheet in accordance with 37 CFR 1.52(b)(4). A new abstract of the disclosure is required and must be presented on a separate sheet, apart from any other text.
3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested:

-- A SYSTEM AND METHOD FOR PREVENTING A CONFLICT BETWEEN  
ACCESSES TO A RESOURCE REQUIRING EXCLUSIVE CONTROL BETWEEN  
EXECUTABLE TASKS --.

4. The disclosure is objected to because of the following informalities:  
typographically error, page 1, line 10, the phrase "There has hitherto been known"  
should be written as "There has ~~hitherto~~ been known. Appropriate correction is  
required.

### ***Claim Objections***

5. Claims 1-4 are objected to because of the following informalities:

Claim 1, lines 2-5, recited “judgment unit judging whether or not an execution of a registration target task gaining an access to a specified resource can be completed before an elapse of deadline time thereof even if an execution start timing of the registration target task is delayed when registering the task” should be written as “judgment unit judging whether or not an execution of a registration target task gaining an access to a specified resource can be completed before an elapse of deadline time ~~thereof~~ even if an execution start timing of the registration target task is delayed when registering the registration target task”. Line 10, recited “execution thereof can be completed” should be rewritten as “execution ~~thereof~~ can be completed”. Appropriate correction is required. For the purpose of examination, examiner will interpret the recited limitation as “judgment unit judging whether or not an execution of a registration target task gaining an access to a specified resource can be completed before an elapse of deadline time ~~thereof~~ even if an execution start timing of the registration target task is delayed when registering the registration target task”.

Claim 2 has the same informalities as claim 1 above. In addition, claim 2, lines 11-13, recited “an execution unit preferentially executing a task having a shorter period of deadline time among the tasks registered as the execution target tasks” should be rewritten as “an execution unit preferentially executing a task having a shorter period of deadline time among ~~the~~ tasks registered as ~~the~~ execution target tasks”. Appropriate corrections are required. For the purpose of examination, examiner will interpret the recited limitation as “an execution unit preferentially executing a task having a shorter period of deadline time among ~~the~~ tasks registered as ~~the~~ execution target tasks”.

Claim 3 has the same informalities as claim 1 above. Appropriate correction is required.

Claim 4 has the same informality as claim 2 above. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. Claims 1-2 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Regarding claims 1-2, these claims are directed to a system, but lack the necessary physical components (hardware) to constitute a machine or manufacture. For example, claims 1-2 recited a system comprising a judgment unit, a registration unit, an execution unit, and a control unit, in which according to the specification page 5, lines 14-27, page 6, lines 1-18 that the recited units are a part of the program. Therefore, these claim limitations can be reasonably interpreted as computer program modules - software per se. Since the specification provides intrinsic evidence of software, thus these claims are construed to cover software under the broadest reasonable interpretation. Hence, claims 1-2 are directed to a software only system and therefore it is directed to a non-statutory subject matter. See MPEP § 2106.01.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claim 1, lines 12-16, it is not clearly understood what is meant by " halting a resource assignment to a task trying to access the specified resource afterward till a resource assignment to a task having earlier accessed to the specified resource is completed among the tasks registered as the execution target tasks when switching over the task" (i.e. the phrase "afterward till" renders the claim indefinite because it is not clear to what the phrase "afterward till" refers to, and it is not clear as to what feature "among the tasks registered as the execution target tasks" refers to). For the purpose of examination, examiner will interpret the recited limitation as "halting a resource assignment to a task trying to access the specified resource until a resource assignment to a task having earlier accessed to the specified resource is completed among tasks registered as execution target tasks when switching over the trying task".

As per claims 2-4, they have the same deficiencies as claim 1 above.

Appropriate corrections are required.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-4 are rejected under 35 U.S.C. 102(e) as being anticipated by Bloks (U.S. Patent No. 7093256).

9. As per claim 3, Bloks teaches a task management method comprising:

step of judging whether or not an execution of a registration target task gaining an access to a specified resource can be completed before an elapse of deadline time thereof even if an execution start timing of the registration target task is delayed when registering the task (abstract, lines 1-7; col. 5, lines 8-13; col. 6, lines 14-50; col. 8, lines 21-24, line 47, judging whether or not an execution of a non-real-time request gaining access to a shared resource can be completed before an elapse of deadline time thereof even if an execution start timing of the non-real-time request is delayed (the execution start timing of the non-real-time request is delayed because the non-real-time request can not be scheduled until all the real-time requests had been scheduled) when scheduling the non-real-time request to access the shared resource);

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step of registering, as an execution target task, the registration target task judged such that the execution thereof can be completed before the elapse of the deadline time (abstract, lines 2-7; col. 6, lines 39-55, scheduling the non-real-time request such that the execution thereof can be completed before the elapse of the deadline time); and

step of halting a resource assignment to a task trying to access the specified resource afterward till a resource assignment to a task having earlier accessed to the specified resource is completed among the tasks registered as the execution target tasks when switching over the task (abstract, lines 1-7; col. 7, lines 16-40; col. 8, lines 14-50; col. 9, lines 9-31; halting a resource assignment to a non-real-time request trying to access the shared resource until a resource assignment to a real-time request and/or non-real-time request having earlier accessed to the shared resource is completed among requests scheduled as the execution requests when switching over the non-real-time request).

10. As per claim 4, it is rejected for the same reason as claim 3 above. In addition, Bloks teaches step of preferentially executing a task having a shorter period of deadline time among the tasks registered as the execution target tasks (col. 6, lines 45-50; col. 9, lines 21-31).

11. As per claims 1-2, they are system claims corresponding to method claims 3-4. Therefore, they are rejected for the same reason as the method claims 3-4 above.

***Conclusion***

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bloks (U.S. Publication No. 2004/0117577) teaches method for scheduling requests to access a shared resource.

Rajkumar (U.S. Publication No. 2003/0061260) teaches system for resource reservation among tasks.

Saito et al (U.S. Patent No. 5887143) teaches method for scheduling tasks using EDF algorithm.

Speed et al (U.S. Publication No 2004/0122983) teaches method for scheduling tasks with deadline.

Deshpande (U.S. Patent No. 7451447) teaches method for dynamically scheduling tasks.

Morgan (U.S. Patent No. 6721948) teaches system for managing shred task.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JENNIFER N. TO whose telephone number is (571)272-7212. The examiner can normally be reached on M-T 6AM- 3:30 PM, F 6AM- 2:30 PM.

14. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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15. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jennifer N. To/  
Patent Examiner, AU 2195